ABSTRACT

The invention is related to a method for determining a characteristic kinetic quantity of a chemical reaction in a sample involving a plurality of chemical species, at least one of said species including at least one fluorophore, the method comprising the steps of: generating, by impinging light on said sample, a non-equilibrium state of said chemical reaction, and observing, by means of a fluorescence signal of at least one fluorophore, at least one portion of a relaxation of concentrations of said species involved. The invention is characterized in that at least one product of said chemical reaction under test comprises a combination of two species each of which including one partner of a FRET pair consisting of a FRET donor and a FRET acceptor wherein said FRET acceptor is a photochrome, the absorption spectrum of which being changeable by irradiation with light of a suitable wavelength; said FRET donor is a fluorophore, the emission spectrum of which having an overlap region with said FRET acceptor's absorption spectrum, the size of said overlap region being dependent on the photochromic state of said FRET acceptor; and said light used for generating said non-equilibrium state has a wavelength capable of switching said photochromic state of said FRET acceptor.